ABSTRACT OF THE DISCLOSURE

A method and apparatus for measuring contour of a full fielded 3D surface of an object. The apparatus includes a projection device having a mark point and master grating, an imaging device for imaging imaged grating and mark point which are positioned on the object surface, and two rectilinearly movable axles. The method includes steps of: measuring a projected object and image distances, and an imaged object and image distances; determining a position of the zero order phase of the fringe according to an imaged mark point on the object surface; calculating orders of the moire fringes for the full fielded 3D surface of the object based on a phase-shift and unwrapping algorithms; and finally calculating an absolute contour of 3D object surface according to a relationship between altitudes of surface points of the object and the moire fringes referencing to a point of the object surface which is derived as a reference point of 3D coordinates.